



# TECHNOLOGY IN TEACHING: INDIA'S PERSPECTIVE

Prof. Prathamesh Churi

Assistant Professor, Department of Computer Engineering, SVKM's NMIMS Mukesh Patel School of Technology Management and Engineering, Mumbai.

## ABSTRACT

The article is about implementation of technology in teaching learning process. The article has a review on current perspective of Indian education and its impact of technology. The article also suggest recent technological trends in modern pedagogy.

**KEYWORDS:** teaching, education, self learning, MOOC.

## INTRODUCTION:

"Technology can never replace teachers [1], but if teachers do not use technology they may get replaced [2]"

### [1] States that:

A modern and well-furnished classroom is defined by various technology these days. There is always constant pressure on management and Institutes to implement technology in classrooms just to make teaching learning smoother. There is always a live debate on whether a technology will replace teachers? Well, the answer is obviously NO. Here are some reasons:

1. Life experiences and knowledge of teacher is more useful and fruitful as compared to smart computers.
2. Technology can bring change with limited scope, teachers has more power, and it is proven time and again.
3. Teaching is not the just explanation of facts and figures, Assessment of students, etc. Rather it is leading, guiding and mentoring and facilitation of students as well.
4. A good teacher encourages a student to learn independently and apply the appropriate knowledge.

### [2] States that:

Today's generation is the fan of technology. To connect with the students, every teacher must explore new things every day. To achieve and explore new things, a teacher must always take the help of technology. However, it is said that technology has immense potential to upgrade today's education system.

The overall scenario is summarized as:

- The motto of using technology is to enable students to learn better through increasing their engagement in educational activities
- Technology is not having expensive material, electronic gadgets. It's all about an innovative pedagogy in learning. Technology had a powerful impact in teaching learning process and aimed at improving results for a student by motivating students for "Self-Learning."
- Technology also has the power to change the performance of an individual student. A student can take help of technology with the limited help of a teacher.

So the central question is "What is more important? Technology or teachers? Well, the answers will have the middle ground of two. According to me, the ideal pedagogy that new teacher must follow is:

**"Teacher's Experience + Technology + Time management"**

From this simple formula, it is evident that it is never a debate on Teacher Vs. Technology, it is Teacher with Technology.

## Advantages of Technology in Education:

### 1. Independent Learning.

Technology Enabled devices motivate students for self-learning. Research on pedagogy states that engaging students in the learning process increases their

attention and focus, motivates them to practice higher-level critical thinking skills and promotes meaningful learning experiences. Many abroad universities have adopted the practice of Virtual Reality devices to make the learning oriented technologies.

### 2. Easier Access to Information:

Technology enabled devices help to access the information easier, anywhere and anytime. Students need not rely entirely on Teacher or Instructor to solve instant doubts. With the aid of online lectures, recorded videos, Simulations students can get their doubts clear smoothly.

### 3. The World is a classroom:

In today's world, we need not sit in the classroom physically; you can sit anywhere. Any online classes, Study material, are made available online. Massive Open Online Courses (MOOC) is one of the most inventions of this.

### 4. Time and Energy Management:

Instead of explaining orally, a teacher can make use of PPT, Videos, Online demonstrations, etc. This saves energy of a teacher. It is said that the concentration level of a student has been reduced drastically to 20 minutes in 1-hour lecture. Managing with this situation can only be solved if you use technology oriented teaching in class. Technology can also help to keep assessment records in a systematic way as you want. Make use of online spreadsheet, Cloud storage for documents, ERP systems can reduce paperwork for a teacher.

## Recent Technology tools in modern pedagogy

1. The collaboration tools, such as those in Google Drive, Dropbox allows students and educators to share study material online, edit them in real time and project them on a screen. This gives students a collaborative platform in which to brainstorm ideas and document their work using multimedia items such as images, text, audios, etc.
2. Presentations (such as PowerPoint, flash media, etc.) enable teachers to embed high-resolution images, block diagrams, simulation videos to augment the text and verbal lecture content.
3. Tablets and smartphones can be linked to computers, projectors, and the cloud so that students and instructors can communicate through text, drawings, and diagrams. Instead of constant attention to PPT on screen, a student may feel sleepy. A student can use tablets or smart phones for learning purpose.
4. Course management tools such as Canvas, Blackboard allow instructors to organize all the study resources students need for a class provide valuable grading tools, and create spaces for discussion, document sharing, and video.
5. Tablets and smartphones are a quick and easy way to survey students during class. This is ideal for instant polling, which can quickly assess students' understanding and help teachers adjust pace and content.
6. Lecture-capture tools, such as Panopto, allow instructors to record lectures directly from their personal computer, without elaborate or additional classroom equipment.

## Technology perspective in India:

India is leading towards world's top education destination in the education indus-

try. There are some reputed and good universities and colleges in India that have managed to attract bright talents all over the world. It is a fact that- Indian education system is robust and built on strong foundations.

According to Indian Brand Equity Foundation Indian education market is currently pegged at \$100 billion with higher education contributing to 59.7%, school education at 38.1%, pre-school at 1.6% and the remainder 0.6% consists of technology and multi-media based education [1][7].

In Recent years, use of technology in Indian education system is growing faster. We have access to high-speed internet and low cost computers/mobile devices there has been growth in the use of technology for learning. India is one of the fastest growing markets for e-learning based tools and services. It is expected that this segment will have a turnover of more than \$80 billion by 2020 [1]. The government aims to increase digital literacy of the country to 50% from current 15% by bringing out favourable policies to give impetus to technology-based learning. Many entrepreneurs and start-ups have grabbed this opportunity to develop technology-based educational products for private and government based schools, colleges, and universities.

Some of the uses of technology in India in the education sector are mentioned below

### 1. Distance education

Distance learning is the process of learning where the students can learn the courses through online access and interact with faculty via online classroom. It helps students to communicate with their teachers directly through chat, e-mail or phone call. The advantages of having distance education are:

- In India, most of the crowd stays in the village. For most of the students, getting a degree in higher education is still a distant dream. In such instances, technology-enabled distance learning can help them to complete their studies, upgrade their skills and get a degree.
- This gives the students the flexibility to learn at their own time without the compulsion of going to a class.
- It is a very cost effective solution. A student who can't afford the fees of Universities can provide distance education courses.

Many Reputed schools like IIT's, NIT's, started their distance learning courses so that students can sit at home/workplace and get a degree. According to a report released by All India Survey on Higher Education 2015-2016 by Ministry of HRD, the total enrolment of students for Distance Education constitutes of 11.7% out of which 46% are female students. Availability of broadband and high-speed internet along with low-cost computers to tier 2 and tier 3 cities has made learning seamlessly without any glitches [2][8]

### 2. Innovative classroom based learning

Nowadays technology has become an essential part of classroom based teachings. Today in many schools, colleges and universities in India instead of blackboard projector screens are used for pedagogy. E-blackboard replaces traditional blackboards in the form of PowerPoint/Flash Presentations, Online demonstrations, etc.. Student experience a different set up in today's technology-based classroom. Animated content is created on various subjects and in different languages so that students can have a better understanding of a complex topic in an easy way.

### 3. Educational Resource Planning

Education Resource Planning have been adopted in many universities in India[3]. This can be a crucial source of growth in efficiency and resources utilization in Indian Universities/schools as far as practical training is concerned. The major efficiency gain can happen regarding scheduling of classes, planned budget allocation and constant communication with students through mediums like email, automated calls using cloud telephony and SMS.

### 4. Online learning management system

Many colleges and universities in India are integrating online Learning Management System or LMS platform into their web portal. Students can remotely log in to access course material and also attend live classes with teachers. Pre-recorded lectures, videos can be uploaded to the LMS platform making it easy for students to go through it multiple times. LMS adoption is still weak in many parts of India where students do not have access to computers or broadband internet. However, a government is providing computers to remote areas and creating content that consumes fewer data and can be easily accessed on the web.

Blackboard is one of the primary LMS that is used by many reputed universities in India.

### 5. Learning through mobile apps

According to a report released by Counterpoint Research, India has become the second biggest smartphone market in the world after China with more than 220 million active users [4]. This presents a tremendous opportunity for delivering e-learning content through mobile apps. There are many online education apps

available on iOS and Android platforms. Indian developers are creating educational apps based on particular subjects. They are simplifying complex concepts with easy to understand illustrations and animations, puzzles games, etc. There are apps available for grammar, physics, chemistry, mathematics, Engineering and so on. The prices of tablets and smartphone are coming down so that people from village area can also buy the devices/gazettes for learning purpose. There are also certain websites like Khan Academy and various YouTube channels that offer video lectures by eminent scholars and teachers in various subjects [5][9]. The sites like Coursera, EDx Started their online certification courses on recent trends.

Even though some of the educational institutions in India ranks par with world's best universities and colleges the use of technology is still limited in Indian education sector. With the rising cost of education, technology-based learning can come to the rescue of those who want to go for a higher degree but cannot afford it. The government needs to play an active role in encouraging educational institution in adopting latest technology for teachings and delivering course content. With its population of 1.2 billion people, the scope for technology-based learning can surpass that of many developed and developing a nation.

Education Technology Challenges in India

There are some threats of using technology oriented teaching as well. Some of them are listed below [6][10]

- In many of the institutes, there is lack of computer hardware, educational software especially in rural areas. There is also a lack of technical support for education institutes
- Lack of training to teachers is the major threat of our Indian education system.
- Lack of knowledge about ways to integrate technologies to enhance curriculum Education technologies integration is not a priority
- Students and Teachers do not have access to the necessary technology at home. There is also a negative facet of new technologies used in education.

However, there are many ethical questions and issues arise with this use of the latest technologies in education.

Ctrl + C and Ctrl + V – Many a times students, even instructor copies content from web resources without even understanding the concept.

Distortion of reality – Search engines give the information about particular content based on the ranks. There is the real danger that their view of reality is distorted by the website, by the fact that someone with enough money can influence what is written or ranked.

Trustworthiness of the Information – Not all information is correct on website. We must check its trustworthiness before using it as learning material.

### CONCLUSION:

As a Conclusion, Technology can reduce the tremendous effort given by students to gather some printed book and journals for acquiring knowledge and increase students' focus on more important knowledge gathering process. Equally important, technology can represent education in ways that help students understand latest concepts and ideas. The Education Technology also enables teachers to integrate project-based learning. With guidance from active teachers, students at different levels can use these tools to construct knowledge and develop skills required in modern society such as presentation skills and analytical skills. In the present time, the teacher's role in teaching is a facilitator. The teacher has to facilitate the learning by providing students with access to technology. The teachers can find the means to engage students more quickly in learning and to cater to the various needs of different students.

### REFERENCES:

1. Website: <http://www.sicomindia.com/blog/122-role-of-technology-in-indian-education-system>
2. Website: [http://www.umass.edu/oapa/oapa/publications/online\\_handbooks/Teaching\\_and\\_Learning\\_Online\\_Handbook.pdf](http://www.umass.edu/oapa/oapa/publications/online_handbooks/Teaching_and_Learning_Online_Handbook.pdf)
3. Website: <http://startup.nujs.edu>
4. Website: <http://indianexpress.com/article/technology/mobile-tabs/india-inches-past-us-as-second-largest-smartphone-market-counterpoint/>
5. Website: <https://net.educause.edu/ir/library/pdf/ELI7060.pdf>
6. Goswami, Chinmoy. "Role of Technology in Indian Education." International Proceedings of Economics Development and Research 79 (2014): 6.
7. F. David and R. Abreu, "Information technology in education: Recent developments in higher education," 2014 9<sup>th</sup> Iberian Conference on Information Systems and Technologies (CISTI), Barcelona, 2014, pp. 1-6.
8. S. S. Gonge and A. A. Ghatol, "Education technology used for improving learning skills of computer science and engineering students," 2013 IEEE International Conference in MOOC, Innovation and Technology in Education (MITE), Jaipur, 2013, pp. 100-103

9. A. Z. Badr, "Plenary talk III: Impact of technology on education: Examples of what has been achieved in Egypt," 2013 8th International Conference on Computer Engineering & Systems (ICCES), Cairo, 2013, pp. xliii-xlv.
10. H. Horvathova, Š. Skrinarova, P. Hanzel and J. Gubalová, "Modern technology in education," 2011 14<sup>th</sup> International Conference on Interactive Collaborative Learning, Piestany, 2011, pp. 373-377.